from the DCE with and without out-out differed. Results suggest that including an opt-out reduces efficiency with respect to power.

**PRM184**

**THE INFLUENCE OF CHOICE TASK LAYOUT ON THE OUTCOMES OF A DISCRETE CHOICE EXPERIMENT**

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**OBJECTIVES:** To empirically test to what extent the layout of choice tasks (i.e., displayed in words or graphics) in a Discrete Choice Experiment (DCE) influences the attribute estimates and the conclusions drawn from the DCE. **METHODS:** A DCE questionnaire was sent to the parents of 2500 newborn babies aged 6 weeks at maximum. Each questionnaire contained two times the same 9 choice tasks, ones words were used to describe the attributes and levels and ones graphics were used. The DCE consisted of five attributes related to the decision of parents to vaccinate their newborn baby against the rotavirus (vaccine effectiveness, frequency of severe side effects, protection duration, location, costs). Mixed logit models were conducted to estimate the relative importance of the attributes. **RESULTS:** Preliminary results are based on 279 observations from 31 parents. In February 2013 data collection will be completed and analyzed. When comparing the choices of every respondent per choice tasks, 58% chose inconsistent at 1 or more choice tasks and 35% chose inconsistent in two or more choice tasks. In both datasets (layout in words and graphics), vaccine effectiveness ($\beta_{\text{effects code 1}}$=0.64 and $\beta_{\text{effects code 1}}$=1.00, $\beta_{\text{effects code 2}}$=0.67 and $\beta_{\text{effects code 2}}$=0.01), frequency of severe side effects ($\beta_{\text{effects code 1}}$=0.26 and $\beta_{\text{effects code 1}}$=0.41, $\beta_{\text{effects code 2}}$=1.22 and $\beta_{\text{effects code 2}}$=0.89) protection duration ($\beta$=0.37, $\beta$=0.17) and costs ($\beta$=-0.10, $\beta$=-0.11) showed significant attribute estimates (P<.05). However, the relative importance of these attributes differed between both datasets. **CONCLUSIONS:** For now it can be concluded that the presentation of the choice sets (by either using words or graphics) in a DCE influences study outcomes. Besides extensive pilot testing to ensure the choice tasks are understood and interpreted as intended, it might be worthwhile to include discussions about the layout of the choice tasks in the focus group stage of the DCE designing process.

**PRM186**

**EVALUATING AND IMPROVING METHODS FOR COGNITIVE DEBRIEFING PRO QUESTIONNAIRES**

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**OBJECTIVES:** Cognitive debriefing is critical to the content validity of patient-reported outcome (PRO) questionnaires. The goal of this poster is to evaluate the time needed to adequately debrief PRO questionnaires and to generate a set of questions that could facilitate the timely and successful completion of cognitive debriefing interviews. **METHODS:** To evaluate cognitive debriefing methods, two research activities were conducted. First, a time-to-complete analysis was conducted using n=44 audio-recorded patient interviews to understand how much time was required to debrief single PRO items. Next, select studies (n=15) were reviewed to document the researcher stated objectives of their cognitive debriefing activities. This list of objectives was used to inform a set of questions that could be asked of patients during debriefing to accomplish those objectives. **RESULTS:** The time-to-complete analysis showed that single questionnaire items required approximately 5 minutes and 45 seconds to be fully debriefed. Primary objectives of cognitive debriefing interviews included the evaluation of a) patients' interpretation of the instructions, items, and response options relative to questionnaire developer's intentions; b) the extent to which item concepts assessed in the questionnaire are comprehensive to the general concept of measurement; c) item language that reflects patient experience, and d) response options as representative of patient health status. **CONCLUSIONS:** Results suggest that it takes approximately 60 minutes to fully debrief a PRO questionnaire constructed of 10 items. Though longer interviews are possible, interviews lasting longer than 60 minutes may produce data of poor quality due to patient fatigue. Therefore, debriefing studies require clearly stated objectives along with targeted questions to help the interviewer successfully and efficiently meet those objectives. The interview questions discussed in this poster can be used by researchers to facilitate the timely and targeted completion of cognitive debriefing interviews for the purpose of supporting content validity of a PRO questionnaire.

## RESEARCH ON METHODS – Statistical Methods

**PRM187**

**COMPARISON BETWEEN TIME-DEPENDENT COX AND MARGINAL STRUCTURAL MODELING APPROACHES TO ESTIMATING THE EFFECT OF PRESCRIPTION COST-SHARING ON PERSISTENCE WITH FIRST-LINE ANTIRETROVIRAL THERAPY AMONG TREATMENT ANTIRETROVIRAL-NAÏVE HIV PATIENTS**

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**OBJECTIVES:** Prescription cost-sharing and pill burden may predict duration of persistence with antiretroviral therapy (ART) in HIV patients. These predictors are correlated and may vary with time, necessitating sophisticated modeling approaches to generate unbiased and consistent estimates of their effects on ART persistence. This analysis compared the estimated effect of ART cost-sharing on ART persistence when adjusting for ART pill burden through traditional time-dependent Cox versus newer marginal structural modeling (MSM) approaches. **METHODS:** Retrospective observational cohort study using a large U.S. claims database. Subjects were commercially-insured antiretroviral-naïve HIV patients initiating ART during the period January 1, 2003 to December 31, 2007. ART persistence was measured as the number of days from ART initiation until addition of a new antiretroviral, 30-day gap in possession of an initiated antiretroviral, or censoring at loss to follow-up. During the period of persistence, ART cost-sharing per 30-day supply of the ART regimen and daily average ART pill burden were measured within a patient-quarter repeated-measures panel dataset. Time-dependent Cox and MSM approaches were compared with respect to their estimated effect of ART cost-sharing (>$50 versus ≤$50) on ART persistence. MSM was implemented using inverse probability of treatment weights within a weighted Cox model with generalized estimating equations. **RESULTS:** Sample comprised 3,731 patients producing 19,199 patient-quarters: mean age=41.1 years; male=83.2%; median ART cost-sharing=$40; median ART pill burden=3.2. Using time-dependent Cox modeling, ART cost-sharing >$50 (versus ≤$50) was estimated to be not significantly associated with ART persistence (Hazard Ratio [HR]=0.96, 95% confidence interval [CI]=0.78-1.18, $p$=0.733). In contrast, using MSM, ART cost-sharing >$50 was estimated to be significantly associated with shorter durations of ART persistence (HR=1.28, 95% CI=1.16-1.43, $p$<0.001). **CONCLUSIONS:** Appropriate model choice is critical in the presence of complex relationships between correlated time-varying predictors and outcomes. Using MSM, ART cost-sharing >$50 was found to be significantly associated with shorter durations of ART persistence.

**PRM188**

**EFFICIENCY OF DIALYSIS CENTERS IN THE UNITED STATES: AN UPDATED EXAMINATION OF FACILITY CHARACTERISTICS THAT INFLUENCE PRODUCTION OF DIALYSIS TREATMENTS**

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**OBJECTIVES:** Medicare has announced plans to include efficiency measures in the End-Stage Renal Disease Quality Incentive Program. Few studies have analyzed US dialysis center efficiency, despite ongoing payment incentives to deliver dialysis care more cost-effectively. The objective of this study was to assess overall dialysis center efficiency as well as the impact of anemia drug choice on efficiency. **METHODS:** Using 2010 data from Medicare Renal Cost Reports, a data envelopment analysis (DEA) was performed to model the technical efficiency of 4,343 free-standing dialysis centers. DEA uses a linear programming technique that converts multiple inputs (costs, staffing levels) and an output measure (number of dialysis sessions) to a relative efficiency score between 0 and 1, where scores are proportional to the efficiency frontier (score of 1.0.) A second DEA was conducted to assess changes in score distribution if labor and supply cost inputs were reduced due to switching to less frequent dosing of anemia drugs. Regression analysis was performed to account for variations in organizational and environmental conditions. **RESULTS:** About 78% of facilities were owned by the two largest chains. Nearly 93% of facilities were for-profit; 75% were in urban areas. 33% of facilities were functioning efficiently (efficiency scores ≥.90); 30% had scores between .70 and .90, and 37% scored <.70. Neither the intensity of market competition nor the profit status of the facility had a significant effect on efficiency. Facilities that were members of large chains were less likely to be efficient. Cost and labor savings due to changes in drug protocols had little effect on overall dialysis center efficiency. **CONCLUSIONS:** Opportunities exist for continued improvements in the efficiency of US dialysis facilities. DEA may be a useful tool for evaluating dialysis center efficiency. Future studies should incorporate quality of care dimensions and case-mix adjustment in the measurement of efficiency.

**PRM189**

**A SYSTEMATIC REVIEW OF THE NETWORK META-ANALYSIS LITERATURE**

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**OBJECTIVES:** Network meta-analysis is a relatively new statistical approach for synthesizing evidence. Network meta-analysis includes both ''direct'' and ''indirect'' comparisons to strengthen inference concerning the relative efficacies of treatment pairs. Further, the approach facilitates simultaneous inference regarding all treatments, allowing the ranking of therapeutic options by effectiveness. This study reviewed published network meta-analyses pertaining to pharmaceuticals, and identified trends in the literature. **METHODS:** Using the PubMed electronic database, we performed a systematic search using the following terms; "network meta-analysis", "mixed treatment comparison", and "indirect treatment comparison". Two reviewers assessed each study. We excluded studies that did not include pharmaceuticals or biologics, pertained to methods, did not report efficacy endpoints, or were not published in English. For each study we reported publication year, funding source (industry or non-industry), disease type, and whether the study included a biologic treatment. **RESULTS:** A total of 142 of the 288 abstracts identified through the systematic search were included. Over time, there has been a rapid growth in the literature, with nine studies published between 1997 and 2008, 14 in 2009, 18 in 2010, 38 in 2011, and 63 in 2012. The majority of studies were non-industry funded (55.6%). Drugs for musculoskeletal and rheumatic disease were the most frequently evaluated (22.5%), followed by drugs for cardiovascular disease (14.8%), cancer (11.3%), e.g., breast cancer and lung cancer, and infectious disease (11.3%), and psychiatric and neurological conditions (10.5%). A total of 35.9% of studies included at least one biologic. **CONCLUSIONS:** The number of published network meta-analyses is growing rapidly. Studies are performed across a range of